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Bescheinigung Certificate Attestation

Die angehefteten Unterlagen stimmen mit der ursprünglich eingereichten Fassung der auf dem nächsten Blatt bezeichneten europäischen Patentanmeldung überein.

The attached documents are exact copies of the European patent application described on the following page, as originally filed.

Les documents fixés à cette attestation sont conformes à la version initialement déposée de la demande de brevet européen spécifiée à la page suivante.

Patentanmeldung Nr. Patent application No. Demande de brevet n°

01117060.2

Der Präsident des Europäischen Patentamts;
Im Auftrag

For the President of the European Patent Office

Le Président de l'Office européen des brevets
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R C van Dijk

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Blatt 2 der Bescheinigung
Sheet 2 of the certificate
Page 2 de l'attestation

Anmeldung Nr.: Application no.: Demande n°: 01117060.2

Anmeldetag: Date of filing: Date de dépôt: 13/07/01

Anmelder: Applicant(s): Demandeur(s):
Agilent Technologies, Inc. (a Delaware corporation)
Palo Alto, CA 94303
UNITED STATES OF AMERICA

Bezeichnung der Erfindung: Title of the invention: Titre de l'invention:
Testing arrangement for optical devices

In Anspruch genommene Priorität(en) / Priority(ies) claimed / Priorité(s) revendiquée(s)

Staat: State: Pays:	Tag: Date: Date:	Aktenzeichen: File no. Numéro de dépôt:

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G01M11/00

Am Anmeldetag benannte Vertragstaaten: Contracting states designated at date of filing: AT/BE/CH/CY/DE/DK/ES/FI/FR/GB/GR/IE/IT/LI/LU/MC/NL/PT/SE/TR
Etats contractants désignés lors du depôt:

Bemerkungen: Remarks: Remarques:

At the time of filing of the application the names and address of the applicant reads as follows :
Agilent Technologies, Inc.
395 Page Mill Road, Palo Alto, CA 94305, USA.
The registration of the change has taken effect as from 18.07.2001.

Agilent Techn l gies July 13, 2001

Our R f.: 20011067

TESTING ARRANGEMENT FOR OPTICAL DEVICES

BACKGROUND OF THE INVENTION

The present invention relates to the testing of optical devices.

Optical devices under test (DUT) are generally tested or measured by applying an optical signal and measuring a response on the applied signal. Such measurements, however, are normally subject to noise caused by optical, electrical, and mechanical sources.

In particular, interferometric measurements employing interferometers (such as e.g. Michelson or other interferometers) have been found to be highly susceptible for mechanical disturbances such as vibration or shock even caused by sound.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide an improved measurement of optical component. The object is solved by the independent claims. Preferred embodiments are shown by the dependent claims.

According to the present invention, a measurement setup for measuring an optical device under test (DUT) is provided comprising a measurement unit with reduced susceptibility to mechanical noise such as e.g. sound or vibration. The measurement unit comprises an optical circuit with such optical components showing high susceptibility to mechanical noise. Such components might in particular comprise interferometers. The optical circuit is provided in a casing providing a shielding against mechanical noise. Preferably the casing is provided with relatively high weight, thus rendering the casing less susceptible to be exited by mechanical vibrations. The casing might therefore compris mass plates or be entirely of a material massive relative to the optical circuit or its components.

relative to the circuit board 20. In a preferred embodiment, the upper and lower casing part 30 and 40 weigh approximately 20kg, while the optical circuit board 20 roughly weighs less than 1kg.

When assembled together, the optical circuit board 20 is mounted to the lower casing part 30, whereby preferably a rubber sheet 80 is inserted in-between. The adapter 60 is coupled to the optical circuit board 20 and the upper casing part 40 will be attached (e.g. using screws or similar attaching devices) to the lower casing part 30, so that the circuit board 20 is housed within a casing comprised of the upper and lower casing part 30 and 40.

The DUT holding unit 50 is attached on top of the upper casing part 40 adapted to couple one or more optical devices thereto and providing an optical connection to one or more optical circuits situated on the optical circuit board 20. The DUT holding unit 50 is preferably provided with adequate facilities allowing to easily arranging one or more DUTs as well known in the art.

The entire assembly comprised of upper and lower casing parts 30 and 40 including the circuit board 20 and the DUT holding unit 50 is placed onto the vibration absorption devices 70A – 70D in order to absorb vibrations of the assembly.

In Figure 2 an optical source 100, such as a wavelength tunable laser source, couples an optical signal to an input 110 of the measurement unit 10. A DUT 120 is coupled into one part of an interferometer 130. Both paths of the interferometer 130 receive the optical input signal from the source 100. An optical detector 140 is coupled to the output of the interferometer 130 and detects the interference signal in response to the applied input signal.

While the measurement unit 10 comprises the optical circuit provided by the interferometer 130 and also bears the DUT 120 (as shown in Figure 1), the optical source 100 as well as the optical receiving device 140 represent

external devices with respect to the measurement unit 10. The measurement unit 10 is adapted to be coupled to such external devices by providing the input 110 and the output 150. As apparent from Figure 1, the casing provided by the upper and lower casing parts 30 and 40 might provide throughputs 200 to couple such external devices of the optical circuit board 20.

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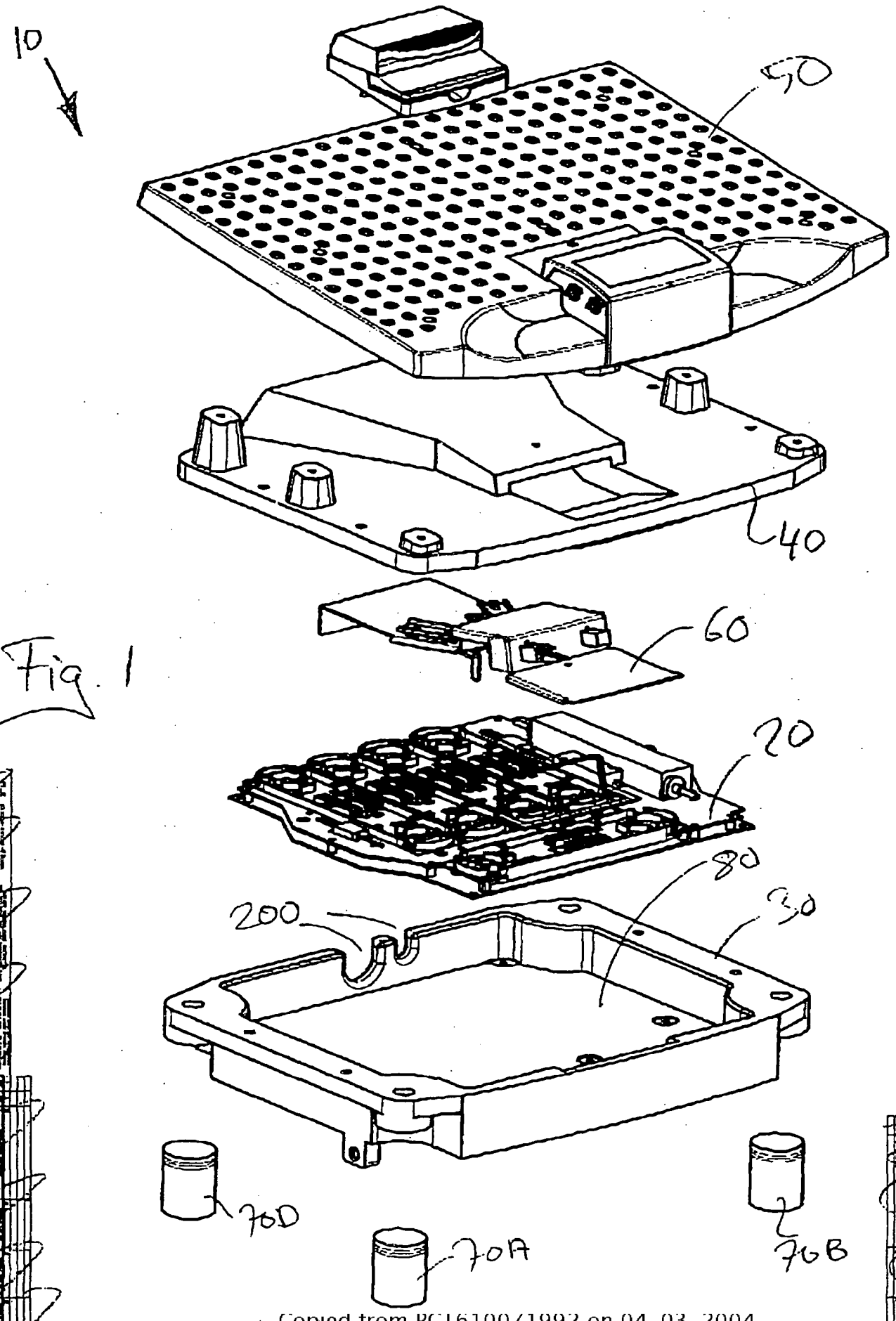

Fig. 1

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Fig. 2